

MANITOWOC PUBLIC UTILITIES

1303 South 8th Street P.O. Box 1090 Manitowoc, WI 54221-1090 920-683-4600 FAX 920-686-4348 www.mpu.org

Mr. Randy Matty, P.E.
Air Management Engineer
Wisconsin Department of Natural Resources
2984 Shawano Ave.
Green Bay, WI 54313-6727

October 23, 2013

Subject: Quarterly Excess Emission Report (third quarter 2013)

Dear Mr. Matty:

Enclosed please find the Quarterly Excess Emission Report for the Manitowoc Public Utilities Power Plant as required by permit conditions I.D.3.c.(4), I.D.4.c.(5), I.D.5.c.(3), I.E.2.c.(4), I.E.5.c.(3), and I.E.4.c.(3), of permit no.: 436035930-P21. This report is for the quarter ending September 30, 2013 for our facility located at 701 Columbus Street, Manitowoc, Wisconsin. The report includes: quarterly fuel sampling & analysis reports, continuous opacity monitoring system reports on S-10 & S-20, reports on our SO₂, NO_x and CO monitoring systems on Boilers B28 and B09, quarterly audits performed on our opacity monitors and quarterly cylinder gas audits for the Part 60 and/or Part 75 analyzers on Boiler B28 and B09.

(a.) Below is the 12-month rolling average heat input to the diesel.

<u>P28 Diesel Unit</u>	
July	6 mmBtu
August	12 mmBtu
September	11 mmBtu
<u>Applicable Limit</u>	4,814 mmBtu/month
Compliance Status	In Compliance

RICE NESHAP ZZZZ requirements after May 3, 2013:

Operate no more than 100 hrs/yr for maintenance and readiness testing, emergency demand response, and local system reliability per [63.6640(f)].	P28 operated 1.7 hours after May 3, 2013
--	--

(b.) Compliance activities for the third quarter of 2013 can be summarized as follows:

	<u>8-SO₂</u>	<u>8-NO_X</u>	<u>8-CO</u>	<u>9-SO₂</u>	<u>9-NO_X</u>	<u>9-CO</u>	<u>Opacity S20</u>	<u>Opacity S10</u>
Excess emissions (%)	0%	0%	0%	0%	0%	0%	0.01 %	0.01 %
Downtime (%)	0.05 %	0.05 %	0.17 %	0.50%	1.00%	0.59%	0.09 %	0.05 %

(c.) Below are the 12-month rolling average mass emissions from B09.

	B09 SO2 Tons	B09 NOx Tons
July	6.2 tons/month	1.62 tons/month
August	5.6 tons/month	1.16 tons/month
September	6.1 tons/month	1.19 tons/month
<u>Applicable Limits</u>	71.2 tons per month 51.02 tons per month	24.62 tons per month 23.33 tons per month
Compliance Status	In Compliance	In Compliance

(d.) Below are the weighted average monthly paper pellet data.

Month	Tons	% Moisture	% Ash	%Sulfur	%Chlorine	BTU Common
June	3,339.0	2.47	5.99	0.06	0.18	10,218
July	4,134.9	2.97	6.37	0.08	0.05	10,985
August	2,964.2	2.66	6.48	0.08	0.05	11,148
September	2,099.6	3.36	5.84	0.10		10,377

Note: All paper pellets were prepared and provided by Pellet America or Greenwood fuels and are classified by the WDNR as non-municipal solid waste.

(e.) Quarterly EPA ECMPS Monitoring Report Submissions.

Monitoring Location	Submission Type	Date Accepted
8 (S20)	MP QTR 3	10/22/2013
8 (S20)	QA QTR 3	10/22/2013
8 (S20)	EM QTR 3	10/22/2013
9	QA QTR 3	10/28/2013
9	EM QTR 3	10/29/2013

(f.) B10 emissions on a 12-month rolling average basis:

Month	B10	B10	B10	B10	B10
	Average PM 12-month (lb)	Average Nox 12-month (lb)	Average SO2 12-month (lb)	Average VOC 12-month (lb)	Average GHG 12-month (ton)
Limit	195	1086	16.7	153	1,492
Jul-13	28.3	158.0	2.2	20.4	223.3
Aug-13	28.4	158.7	2.2	20.5	224.3
Sep-13	26.9	150.6	2.1	19.5	212.9

(g.) B28 emissions on a 12-month rolling average basis:

Month	B8	B8 HI exclude bio.	S20 (B8)	S20 (B8)	S20 (B8)	S20 (B8) Organic Compds	Total B8 HI Rolling 12- month							
	Average PM	Average PM10	Average PM2.5	Average CO	Average Pb	Average F	Average H2SO4	Average GHG	Average HI 12-month mmBtu	Arsenic 12-month Total	Nox 12-month Total	SO2 12-month Total	12-month Total	[=] mmBtu
	12-month (ton)	12-month mmBtu	12-month Total	7.76	34.125	7.76	133,333							
Limit	1.383	1.383	0.94	35.5	1.70E-02	0.054	0.64	13,816.0	133,333	98.1	7.76	34.125	7.76	133,333
Jul-13	0.620	0.620	0.35	4.5	9.72E-05	0.015	0.10	5,299.7	12,073	0.23	3.53	5.417	0.05	49,586
Aug-13	0.702	0.702	0.40	4.8	1.10E-04	0.017	0.11	6,020.2	13,967	0.26	3.77	5.908	0.06	56,200
Sep-13	0.748	0.748	0.43	5.1	1.17E-04	0.018	0.11	6,422.2	14,302	0.27	3.71	5.767	0.06	59,812

(h.) B09 emissions on a 12-month rolling average basis:

Month	B9	S10 (B9)								
	Average PM	Average PM10	Average PM2.5	Average CO	Average Pb	Average F	Average H2SO4	Average GHG	Arsenic	
	12-month (ton)	12-month total								
Limit	4.025	3.190	2.560	35.6	0.028	0.3380	0.99	42,289.0	27.40	
Jul-13	0.429	0.429	0.270	0.52	2.35E-05	0.0149	0.054	5,410.1	2.00	
Aug-13	0.387	0.387	0.244	0.38	2.13E-05	0.0134	0.049	4,907.0	1.81	
Sep-13	0.421	0.421	0.265	0.38	2.31E-05	0.0146	0.054	5,331.7	1.97	

Furthermore, with regards to Boiler B28 and B09, to the best of my knowledge, based on the information supplied to me:

- a) There were 0 boiler operating days for which pollutant or diluent data have not been obtained by an approved method for at least 18 hours of operation of the facility.
- b) The Fc factor for unit B28 ranged from 1,040 to 1,875 and unit B09 ranged from 1,040 to 1,866. The fuel combusted was an 80%/20% pet coke/coal blend either alone or in combination with paper pellets and/or charcoal on units 8 and 9.
- c) There were 0 times when hourly averages have been obtained based on manual sampling methods.
- d) There were 0 times when the pollutant concentration exceeded full span of the continuous monitoring system.
- e) There were 0 modifications to the continuous monitoring system which could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3 of 40 CFR part 60, Appendix B.
- f) There were 0 changes made in operation of the emissions control systems during any period of data unavailability.
- g) The required continuous monitoring system calibration, span, and drift checks or other periodic audits have been performed as specified.
- h) The data used to show compliance was obtained in accordance with approved methods and procedures of NR 440 and is representative of plant performance.
- i) The minimum data requirements have been met.
- j) Compliance with the standards has been achieved during the reporting period except as specified in the enclosed reports.

If you have any questions concerning this report please call me at (920) 686-4211.

Sincerely,



Jerry Ahlsweide
Energy Supply and Production Supervisor

Cc: Red Jones – MPU, Tom Reed – MPU, Tim Harding – MPU, Scott Karbon – MPU

Enclosure

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, WI 53707

FUEL SAMPLING & ANALYSIS REPORT

Form 4500-134

4-94

Date Received By DNR

PART I. FACILITY INFORMATION

Name of Company / FID	Manitowoc Public Utilities / 436035930	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 QTR. 2013
Address	701 Columbus Street	Limit <u>None</u>
City, State, Zip Code	Manitowoc, WI 54220	Test Frequency Required <input type="checkbox"/> PER SHIPMENT
Stack/Process	S20 / B28	<input type="checkbox"/> DAILY <input checked="" type="checkbox"/> WEEKLY <input type="checkbox"/> MONTHLY <input type="checkbox"/> QUARTERLY

PART II. EXCESS EMISSIONS (EE)

A. Total Fuel Quantity Used as Fired	<input checked="" type="checkbox"/> tons fuel <input type="checkbox"/> 1000 gallons oil	13,635.7
B. Weighted Average Percent Ash as Fired		4.29
C. Weighted Average Percent Sulfur as Fired		1.84
D. Weighted Average Heat Content as Fired	<input type="checkbox"/> BTU/pound fuel <input type="checkbox"/> BTU/gallon oil	11,496
E. Weighted Average Sulfur Dioxide as Fired (pounds SO2/mmBtu) (UNCONTROLLED)		3.17
F. Number of Possible Sample Periods In Qtr. (92,91,90,13,3,1, per shipment)		13
G. Number of Actual Samples Performed Per Quarter		13
H. Number of Samples Over Limit		0
I. Percent Unavailability of Samples ¹		0
J. Percent Excess Emission ²		0

¹ (F-G)/F x 100

Fuel is a blend consisting of petroleum coke and/or coal

² (H/G) x 100

plus paper pellets and charcoal.

**If the total duration of excess emissions is greater than 1% or the total percent unavailability is greater than 5%, then both this Fuel Sampling & Analysis Summary and the Complete Fuel Sampling and Analysis Report shall be submitted. If both conditions are satisfied, then only this Fuel Sampling and Analysis Summary and the results of any fuel audits performed shall be submitted. Additional information may be requested by the Department.

I certify that the information contained in this report is true, accurate, and complete.

Signature 	Title Energy Supply and Production Supervisor	
Printed/Typed Name Jerry Ahlsweide	Telephone Number (incl. Area code) (920) 686-4211	Date Signed <u>10-24-2013</u>

LEAVE BLANK - FOR DNR USE ONLY

Recommendation:

DNR Reviewer _____

Date Reviewed _____

Comments:

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, WI 53707

FUEL SAMPLING & ANALYSIS REPORT
Form 4500-134 4-94

Date Received By DNR

PART I. FACILITY INFORMATION

Name of Company / FID	Manitowoc Public Utilities / 436035930	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 QTR. 2013
Address	701 Columbus Street	Limit None
City, State, Zip Code	Manitowoc, WI 54220	Test Frequency Required <input type="checkbox"/> PER SHIPMENT
Stack/Process	S10 / B09	<input type="checkbox"/> DAILY <input checked="" type="checkbox"/> WEEKLY <input type="checkbox"/> MONTHLY <input type="checkbox"/> QUARTERLY

PART II. EXCESS EMISSIONS (EE)

A. Total Fuel Quantity Used as Fired	<input checked="" type="checkbox"/> tons fuel <input type="checkbox"/> 1000 gallons oil	14,920.4
B. Weighted Average Percent Ash as Fired		2.12
C. Weighted Average Percent Sulfur as Fired		4.24
D. Weighted Average Heat Content as Fired	<input type="checkbox"/> BTU/pound fuel <input checked="" type="checkbox"/> BTU/gallon oil	12,860
E. Weighted Average Sulfur Dioxide as Fired (pounds SO2/mmBtu) (UNCONTROLLED)		6.57
F. Number of Possible Sample Periods In Qtr. (92,91,90,13,3,1, per shipment)		13
G. Number of Actual Samples Performed Per Quarter		13
H. Number of Samples Over Limit		0
I. Percent Unavailability of Samples ¹		0
J. Percent Excess Emission ²		0

¹ (F-G)/F x 100

Fuel is a blend consisting of petroleum coke and/or coal

² (H/G) x 100

plus paper pellets and charcoal.

**If the total duration of excess emissions is greater than 1% or the total percent unavailability is greater than 5%, then both this Fuel Sampling & Analysis Summary and the Complete Fuel Sampling and Analysis Report shall be submitted. If both conditions are satisfied, then only this Fuel Sampling and Analysis Summary and the results of any fuel audits performed shall be submitted. Additional information may be requested by the Department.

I certify that the information contained in this report is true, accurate, and complete.

Signature <i>Jerry Ahlsweide</i>	Title Energy Supply and Production Supervisor	
Printed/Typed Name Jerry Ahlsweide	Telephone Number (incl. Area code) (920) 686-4211	Date Signed 10-24-2013

LEAVE BLANK - FOR DNR USE ONLY

Recommendation:	DNR Reviewer _____
	Date Reviewed _____
Comments:	

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Note: Completion of this form is required
pursuant to chapter NR 439, Wis. Adm. Code

Excess Emission Report - Opacity
Form 4500-125 (R 5/09)

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company 436035930 / Manitowoc Public Utilities

1 2 3 4 QTR. 2013

Address 701 Columbus Street
Manitowoc, WI 54220

Cert./CEA 09-10-2013 (date)

Manufacturer/Model Number
United Science Inc. Model No. 550

Stack/Process
S10 / P28, B09

Emission Limit 20%

Total Source Operating Time in Quarter 61,013 (mins)

PART II. CAUSES OF EXCESS EMISSIONS (EE)

Duration of EE (mins) % of Operating Time¹

A. Startup/Shutdown	6	0.01%
B. Soot Blowing	0	0%
C. Control Equipment Malfunction	0	0%
D. Process Malfunction	0	0%
E. Other Known Causes	0	0%
F. Unknown Causes	0	0%
G. Total (A + B + ...F)	6 ²	0.01%

PART III. CAUSES OF CEMS DOWNTIME

Downtime (mins) % of Operating Time¹

A. Monitor Equipment Malfunction	0	0%
B. Non-Monitor Equipment Malfunction	0	0%
C. QA/QC Calibration	30	0.05%
D. Other Known Causes	0	0%
E. Unknown Causes	0	0%
F. Total (A + B + ...E)	30 ²	0.05%

¹ [EE (mins) or Downtime (mins) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature	Title
-----------	-------

Energy Supply and Production Supervisor

Printed/Typed Name	Phone Number (incl. Area Code)	Date Signed
--------------------	--------------------------------	-------------

Jerry Ahlsweide

(920) 686-4211

10-24-2013

LEAVE BLANK - FOR DNR USE ONLY

Recommendation

DNR Reviewer

Date Reviewed

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Note: Completion of this form is required
pursuant to chapter NR 439, Wis. Adm. Code

Excess Emission Report - Opacity
Form 4500-125 (R 5/09)

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company 436035930 / Manitowoc Public Utilities

1 2 3 4 QTR. 2013

Address 701 Columbus Street
Manitowoc, WI 54220

Cert./CEA 09-10-2013 (date)

Manufacturer/Model Number
United Science Inc. Model No. 550

Stack/Process
S20 / B28

Emission Limit 20%

Total Source Operating Time in Quarter 112,792 (mins)

PART II. CAUSES OF EXCESS EMISSIONS (EE)

Duration of EE (mins)

% of Operating Time¹

A. Startup/Shutdown	0	0%
B. Soot Blowing	0	0%
C. Control Equipment Malfunction	0	0%
D. Process Malfunction	0	0%
E. Other Known Causes	12	0.01%
F. Unknown Causes	0	0%
G. Total (A + B + ...F)	12	0.01%

PART III. CAUSES OF CEMS DOWNTIME

Downtime (mins)

% of Operating Time¹

A. Monitor Equipment Malfunction	0	0%
B. Non-Monitor Equipment Malfunction	0	0%
C. QA/QC Calibration	102	0.09%
D. Other Known Causes	0	0%
E. Unknown Causes	0	0%
F. Total (A + B + ...E)	102	0.09%

¹ [EE (mins) or Downtime (mins) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature	Title	Energy Supply and Production Supervisor
-----------	-------	---

Printed/Typed Name	Phone Number (incl. Area Code) (920) 686-4211	Date Signed 10-24-2013
--------------------	--	---------------------------

LEAVE BLANK - FOR DNR USE ONLY

Recommendation

DNR Reviewer

Date Reviewed

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Excess Emission Report - SO₂/NO_x/TRS/H₂S/VOC/CO/Hg
Form 4500-126 (R 5/09)

Note: Completion of this form is required pursuant to chapter NR 439, Wis. Adm. Code.

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company	436035930 / Manitowoc Public Utilities		1 2 <input checked="" type="checkbox"/> 3 4 QTR. 2013 Cert <u>CGA: 08/29/2013</u> (date) <u>RATA: 07/23/2013</u> (date)
Address	701 Columbus Street, Manitowoc, WI 54220		Type of Audit: <u>CGA</u> , IAA, RAA, <u>RATA</u>
		<u>Emission Limit</u> 0.89 lbs SO ₂ /mmBtu (30-day rolling ave.) 90% reduction of SO ₂ (30-day rolling ave.) 70% reduction of SO ₂ if S < 1%	
Manufacturer/Model Number	Stack Process	Total Source Operating Time in Quarter <u>1,847.65</u> (hrs)	
TEI Model: 43iSO2 S/N 0908635559	S20 / B28	Pollutant	SO ₂

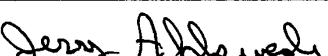
PART II. CAUSES OF EXCESS EMISSIONS (EE)		Duration of EE (hrs)	% of Operating Time ¹
A. Startup/Shutdown		0	0%
		0	0%
		0	0%
		0	0%
		0	0%
		0	0%
	G. Total (A + B + ...F)	0	² 0%

PART III. CAUSES OF CEMS DOWNTIME		Downtime (hrs)	% of Operating Time ¹
A. Monitor Equipment Malfunction		0	0%
		0	0%
		1.0	0.05%
		0	0%
		0	0%
	F. Total (A + B + ...E)	1.0	² 0.05%

¹ [EE (hrs) or Downtime (hrs) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature	Title	
	Energy Supply and Production Supervisor	
Printed/Typed Name	Phone Number (incl. Area Code)	Date Signed
Jerry Ahlsweide	(920) 686-4211	10-24-2013

LEAVE BLANK - FOR DNR USE ONLY

Recommendation	DNR Reviewer _____
	Date Reviewed _____

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 07/01/2013 Through 07/31/2013

Source:

S20

Standard Limit:

0.89

Parameter:

S20SO2#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
07/01/13	22	22	0.092	30	676	0.135
07/02/13	24	24	0.149	30	678	0.138
07/03/13	24	24	0.069	30	678	0.134
07/04/13	24	24	0.111	30	678	0.133
07/05/13	24	24	0.136	30	678	0.137
07/06/13	24	24	0.186	30	681	0.143
07/07/13	24	24	0.165	30	684	0.148
07/08/13	24	24	0.221	30	685	0.151
07/09/13	24	24	0.188	30	689	0.155
07/10/13	24	24	0.165	30	692	0.160
07/11/13	24	24	0.143	30	714	0.165
07/12/13	24	24	0.130	30	714	0.164
07/13/13	24	24	0.124	30	714	0.162
07/14/13	24	24	0.220	30	714	0.163
07/15/13	24	24	0.170	30	714	0.162
07/16/13	24	24	0.209	30	714	0.164
07/17/13	24	24	0.198	30	714	0.168
07/18/13	24	24	0.205	30	714	0.173
07/19/13	24	24	0.204	30	714	0.172
07/20/13	24	24	0.160	30	714	0.170
07/21/13	24	24	0.114	30	715	0.167
07/22/13	24	24	0.236	30	715	0.170
07/23/13	24	24	0.256	30	715	0.173
07/24/13	24	24	0.205	30	715	0.176
07/25/13	24	24	0.208	30	715	0.178
07/26/13	21	21	0.187	30	712	0.179
07/27/13	0	0	F	30	712	0.179 F
07/28/13	0	0	F	30	712	0.179 F
07/29/13	19	19	0.221	30	707	0.178
07/30/13	19	19	0.210	30	702	0.177
07/31/13	24	24	0.069	30	702	0.173

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 08/01/2013 Through 08/31/2013

Source: S20
Parameter: S20SO2#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
08/01/13	24	24	0.047	30	705	0.167
08/02/13	21	21	0.083	30	704	0.166
08/03/13	0	0	F	30	704	0.166 F
08/04/13	2	2	0.000	30	682	0.161
08/05/13	24	24	0.258	30	682	0.168
08/06/13	24	24	0.134	30	682	0.168
08/07/13	23	23	0.234	30	681	0.172
08/08/13	24	24	0.094	30	681	0.169
08/09/13	24	24	0.124	30	681	0.167
08/10/13	21	21	0.137	30	678	0.164
08/11/13	21	21	0.183	30	675	0.164
08/12/13	24	24	0.153	30	675	0.164
08/13/13	24	24	0.073	30	675	0.161
08/14/13	24	24	0.100	30	675	0.160
08/15/13	21	21	0.209	30	672	0.163
08/16/13	19	19	0.195	30	667	0.163
08/17/13	18	18	0.237	30	661	0.165
08/18/13	19	19	0.166	30	656	0.163
08/19/13	24	24	0.218	30	656	0.164
08/20/13	24	24	0.210	30	656	0.164
08/21/13	24	24	0.161	30	656	0.163
08/22/13	24	24	0.116	30	656	0.161
08/23/13	13	13	0.240	30	645	0.165
08/24/13	0	0	F	30	645	0.165 F
08/25/13	1	1	0.000	30	622	0.158
08/26/13	24	24	0.161	30	622	0.154
08/27/13	24	24	0.192	30	622	0.154
08/28/13	24	24	0.206	30	622	0.154
08/29/13	24	24	0.169	30	625	0.153
08/30/13	24	24	0.175	30	630	0.152
08/31/13	21	21	0.225	30	632	0.152

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 09/01/2013 Through 09/30/2013

Source: S20

Standard Limit:

0.89

Parameter: S20SO2#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
09/01/13	18	18	0.204	30	626	0.157
09/02/13	0	0	F	30	626	0.157 F
09/03/13	22	22	0.161	30	624	0.161
09/04/13	24	24	0.213	30	627	0.165
09/05/13	24	24	0.206	30	649	0.172
09/06/13	24	24	0.203	30	649	0.170
09/07/13	24	24	0.147	30	649	0.170
09/08/13	24	24	0.113	30	650	0.166
09/09/13	24	24	0.211	30	650	0.170
09/10/13	24	24	0.239	30	650	0.174
09/11/13	24	24	0.207	30	653	0.177
09/12/13	23	23	0.249	30	655	0.179
09/13/13	18	18	0.242	30	649	0.182
09/14/13	20	20	0.179	30	645	0.185
09/15/13	0	0	F	30	645	0.185 F
09/16/13	0	0	F	30	645	0.185 F
09/17/13	17	17	0.027	30	638	0.183
09/18/13	21	21	0.170	30	638	0.181
09/19/13	24	24	0.200	30	643	0.182
09/20/13	21	21	0.246	30	646	0.182
09/21/13	0	0	F	30	646	0.182 F
09/22/13	1	1	0.000	30	628	0.176
09/23/13	24	24	0.108	30	628	0.173
09/24/13	24	23	0.112	30	627	0.169
09/25/13	24	24	0.134	30	627	0.169
09/26/13	24	24	0.095	30	627	0.168
09/27/13	24	24	0.147	30	638	0.165
09/28/13	21	21	0.139	30	658	0.169
09/29/13	19	19	0.273	30	653	0.173
09/30/13	24	24	0.228	30	653	0.174

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 07/01/2013 Through 07/31/2013

Source:	S20		Standard Limit:			
	Parameter:	S20SO2RE	Low Limit:		90	
Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
07/01/13	22	22	96.2	30	676	95.3
07/02/13	24	24	95.7	30	678	95.3
07/03/13	24	24	96.8	30	678	95.4
07/04/13	24	24	95.6	30	678	95.4
07/05/13	24	24	95.9	30	678	95.3
07/06/13	24	24	95.7	30	681	95.5
07/07/13	24	24	96.1	30	684	95.4
07/08/13	24	24	94.2	30	685	95.3
07/09/13	24	24	95.0	30	689	95.3
07/10/13	24	24	95.1	30	692	95.6
07/11/13	24	24	93.7	30	714	95.4
07/12/13	24	24	92.7	30	714	95.3
07/13/13	24	24	95.2	30	714	95.2
07/14/13	24	24	95.5	30	714	95.3
07/15/13	24	24	95.5	30	714	95.3
07/16/13	24	24	95.0	30	714	95.3
07/17/13	24	24	95.1	30	714	95.2
07/18/13	24	24	95.3	30	714	95.2
07/19/13	24	24	95.9	30	714	95.2
07/20/13	24	24	96.6	30	714	95.3
07/21/13	24	24	95.9	30	715	95.3
07/22/13	24	24	93.6	30	715	95.3
07/23/13	24	24	93.4	30	715	95.2
07/24/13	24	24	94.3	30	715	95.1
07/25/13	24	24	94.5	30	715	95.1
07/26/13	21	21	95.1	30	712	95.0
07/27/13	0	0	F	30	712	95.0 F
07/28/13	0	0	F	30	712	95.0 F
07/29/13	19	19	93.7	30	707	95.0
07/30/13	19	19	94.1	30	702	95.0
07/31/13	24	24	97.6	30	702	95.1

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 08/01/2013 Through 08/31/2013

Source:	S20		Standard Limit:				
	Parameter:	S20SO2RE	Low Limit:		90		
Date			Daily			30 - Day	
Operating	Hours	Valid Hours	Average	Valid Days	Valid Hours		
08/01/13		24	24	97.6	30	705	95.2
08/02/13		21	21	96.3	30	704	95.2
08/03/13		0	0	F	30	704	95.2 F
08/04/13		2	2	100.0	30	682	95.4
08/05/13		24	24	91.0	30	682	95.2
08/06/13		24	24	95.4	30	682	95.2
08/07/13		23	23	93.9	30	681	95.1
08/08/13		24	24	96.4	30	681	95.1
08/09/13		24	24	94.3	30	681	95.1
08/10/13		21	21	94.6	30	678	95.1
08/11/13		21	21	94.7	30	675	95.1
08/12/13		24	24	95.3	30	675	95.1
08/13/13		24	24	95.5	30	675	95.1
08/14/13		24	24	95.1	30	675	95.2
08/15/13		21	21	93.3	30	672	95.2
08/16/13		19	19	93.9	30	667	95.1
08/17/13		18	18	93.3	30	661	95.0
08/18/13		19	19	95.2	30	656	95.0
08/19/13		24	24	93.7	30	656	95.0
08/20/13		24	24	94.6	30	656	95.0
08/21/13		24	24	95.8	30	656	95.0
08/22/13		24	24	96.3	30	656	94.9
08/23/13		13	13	92.3	30	645	94.8
08/24/13		0	0	F	30	645	94.8 F
08/25/13		1	1	100.0	30	622	95.0
08/26/13		24	24	96.0	30	622	95.1
08/27/13		24	24	95.0	30	622	95.1
08/28/13		24	24	93.9	30	622	95.1
08/29/13		24	24	93.8	30	625	95.1
08/30/13		24	24	94.2	30	630	95.1
08/31/13		21	21	94.2	30	632	95.1

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 09/01/2013 Through 09/30/2013

Source:	S20	Standard Limit:					
		Daily			30 - Day		
Parameter:	S20SO2RE	Low Limit:			90		
		Operating	Hours	Valid Hours	Average	Valid Days	Valid Hours
Date							
09/01/13		18		18	92.4	30	626
09/02/13		0		0	F	30	626
09/03/13		22		22	95.3	30	624
09/04/13		24		24	93.0	30	627
09/05/13		24		24	93.2	30	649
09/06/13		24		24	93.9	30	649
09/07/13		24		24	94.3	30	649
09/08/13		24		24	88.3	30	650
09/09/13		24		24	92.4	30	650
09/10/13		24		24	92.7	30	650
09/11/13		24		24	93.4	30	653
09/12/13		23		23	90.1	30	655
09/13/13		18		18	92.4	30	649
09/14/13		20		20	94.7	30	645
09/15/13		0		0	F	30	645
09/16/13		0		0	F	30	645
09/17/13		17		17	97.8	30	638
09/18/13		21		21	92.1	30	638
09/19/13		24		24	93.4	30	643
09/20/13		21		21	90.9	30	646
09/21/13		0		0	F	30	646
09/22/13		1		1	100.0	30	628
09/23/13		24		24	93.9	30	628
09/24/13		24		23	94.6	30	627
09/25/13		24		24	94.2	30	627
09/26/13		24		24	94.5	30	627
09/27/13		24		24	92.9	30	638
09/28/13		21		21	95.6	30	658
09/29/13		19		19	90.2	30	653
09/30/13		24		24	93.3	30	653

F = Unit Offline

I = Invalid

E = Exceedance

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Excess Emission Report - SO₂/NO_x/TRS/H₂S/VOC/CO/Hg
Form 4500-126 (R 5/09)

Note: Completion of this form is required pursuant to chapter NR 439, Wis. Adm. Code.

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company	436035930 / Manitowoc Public Utilities		1 2 <input checked="" type="checkbox"/> 3 4 QTR. 2013 Cert. <u>CGA: 08/29/2013</u> (date) <u>RATA: 07/23/2013</u> (date)
Address	701 Columbus Street, Manitowoc, WI 54220		Type of Audit: <u>CGA</u> , IAA, RAA, <u>RATA</u>
Manufacturer/Model Number	Stack Process	Emission Limit 0.55 lbs NO _x /mmBtu (30-day rolling ave.) 0.20 lbs NO _x /mmBtu during ozone season	
TEI Model: 42iNOx S/N 0908635558	S20 / B28	Total Source Operating Time in Quarter <u>1,847.65</u> (hrs)	
		Pollutant <u>NO_x</u>	

PART II. CAUSES OF EXCESS EMISSIONS (EE)		Duration of EE (hrs)	% of Operating Time ¹
A. Startup/Shutdown		0	0%
		0	0%
		0	0%
		0	0%
		0	0%
		0	0%
	G. Total (A + B + ...F)	0	² 0%

PART III. CAUSES OF CEMS DOWNTIME		Downtime (hrs)	% of Operating Time ¹
A. Monitor Equipment Malfunction		0	0%
		0	0%
	C. QA/QC Calibration	1.0	0.05%
	D. Other Known Causes	0	0%
	E. Unknown Causes	0	0%
	F. Total (A + B + ...E)	1.0	² 0.05%

¹ [EE (hrs) or Downtime (hrs) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature	Title	
	Energy Supply and Production Supervisor	
Printed/Typed Name Jerry Ahlsweide	Phone Number (incl. Area Code) (920) 686-4211	Date Signed <u>10-24-2013</u>

LEAVE BLANK - FOR DNR USE ONLY

Recommendation	DNR Reviewer _____
	Date Reviewed _____

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 07/01/2013 Through 07/31/2013

Source: S20

Standard Limit:

0.2

Parameter: S20NOX#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
07/01/13	22	22	0.078	30	676	0.085
07/02/13	24	24	0.101	30	678	0.086
07/03/13	24	24	0.101	30	678	0.087
07/04/13	24	24	0.101	30	678	0.087
07/05/13	24	24	0.101	30	678	0.086
07/06/13	24	24	0.083	30	681	0.085
07/07/13	24	24	0.086	30	684	0.084
07/08/13	24	24	0.064	30	685	0.083
07/09/13	24	24	0.071	30	689	0.082
07/10/13	24	24	0.077	30	692	0.080
07/11/13	24	24	0.109	30	714	0.083
07/12/13	24	24	0.103	30	714	0.085
07/13/13	24	24	0.100	30	714	0.086
07/14/13	24	24	0.062	30	714	0.086
07/15/13	24	24	0.078	30	714	0.085
07/16/13	24	24	0.059	30	714	0.084
07/17/13	24	24	0.067	30	714	0.082
07/18/13	24	24	0.080	30	714	0.080
07/19/13	24	24	0.058	30	714	0.080
07/20/13	24	24	0.087	30	714	0.081
07/21/13	24	24	0.141	30	715	0.083
07/22/13	24	24	0.079	30	715	0.082
07/23/13	24	24	0.083	30	715	0.082
07/24/13	24	24	0.082	30	715	0.081
07/25/13	24	24	0.082	30	715	0.082
07/26/13	21	21	0.055	30	712	0.081
07/27/13	0	0	F	30	712	0.081 F
07/28/13	0	0	F	30	712	0.081 F
07/29/13	19	19	0.048	30	707	0.080
07/30/13	19	19	0.062	30	702	0.080
07/31/13	24	24	0.110	30	702	0.082

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 08/01/2013 Through 08/31/2013

Source:

S20

Standard Limit:

0.2

Parameter:

S20NOX#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
08/01/13	24	24	0.140	30	705	0.085
08/02/13	21	21	0.103	30	704	0.086
08/03/13	0	0	F	30	704	0.086 F
08/04/13	2	2	0.024	30	682	0.083
08/05/13	24	24	0.064	30	682	0.082
08/06/13	24	24	0.092	30	682	0.082
08/07/13	23	23	0.075	30	681	0.081
08/08/13	24	24	0.111	30	681	0.082
08/09/13	24	24	0.117	30	681	0.083
08/10/13	21	21	0.096	30	678	0.084
08/11/13	21	21	0.080	30	675	0.084
08/12/13	24	24	0.087	30	675	0.084
08/13/13	24	24	0.105	30	675	0.084
08/14/13	24	24	0.095	30	675	0.084
08/15/13	21	21	0.068	30	672	0.083
08/16/13	19	19	0.070	30	667	0.083
08/17/13	18	18	0.073	30	661	0.083
08/18/13	19	19	0.075	30	656	0.084
08/19/13	24	24	0.106	30	656	0.085
08/20/13	24	24	0.075	30	656	0.085
08/21/13	24	24	0.078	30	656	0.085
08/22/13	24	24	0.078	30	656	0.085
08/23/13	13	13	0.074	30	645	0.083
08/24/13	0	0	F	30	645	0.083 F
08/25/13	1	1	0.011	30	622	0.081
08/26/13	24	24	0.060	30	622	0.080
08/27/13	24	24	0.077	30	622	0.080
08/28/13	24	24	0.072	30	622	0.079
08/29/13	24	24	0.093	30	625	0.081
08/30/13	24	24	0.093	30	630	0.082
08/31/13	21	21	0.082	30	632	0.083

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 09/01/2013 Through 09/30/2013

Source:

S20

Standard Limit:

0.2

Parameter:

S20NOX#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
09/01/13	18	18	0.089	30	626	0.082
09/02/13	0	0	F	30	626	0.082 F
09/03/13	22	22	0.072	30	624	0.080
09/04/13	24	24	0.074	30	627	0.079
09/05/13	24	24	0.075	30	649	0.080
09/06/13	24	24	0.077	30	649	0.081
09/07/13	24	24	0.092	30	649	0.081
09/08/13	24	24	0.108	30	650	0.082
09/09/13	24	24	0.062	30	650	0.080
09/10/13	24	24	0.054	30	650	0.078
09/11/13	24	24	0.062	30	653	0.077
09/12/13	23	23	0.055	30	655	0.076
09/13/13	18	18	0.045	30	649	0.075
09/14/13	20	20	0.081	30	645	0.074
09/15/13	0	0	F	30	645	0.074 F
09/16/13	0	0	F	30	645	0.074 F
09/17/13	17	17	0.095	30	638	0.074
09/18/13	21	21	0.066	30	638	0.074
09/19/13	24	24	0.068	30	643	0.074
09/20/13	21	21	0.056	30	646	0.073
09/21/13	0	0	F	30	646	0.073 F
09/22/13	1	1	0.018	30	628	0.072
09/23/13	24	24	0.056	30	628	0.070
09/24/13	24	23	0.075	30	627	0.070
09/25/13	24	24	0.078	30	627	0.070
09/26/13	24	24	0.106	30	627	0.071
09/27/13	24	24	0.103	30	638	0.072
09/28/13	21	21	0.090	30	658	0.075
09/29/13	19	19	0.087	30	653	0.075
09/30/13	24	24	0.051	30	653	0.075

F = Unit Offline

I = Invalid

E = Exceedance

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Excess Emission Report - SO₂/NO_x/TRS/H₂S/VOC/CO/Hg
Form 4500-126 (R 5/09)

Note: Completion of this form is required pursuant to chapter NR 439, Wis. Adm. Code.

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company	436035930 / Manitowoc Public Utilities		1 2 <input checked="" type="checkbox"/> 3 4 QTR. 2013 Cert. <u>CGA: 08/29/2013</u> (date) <u>RATA: 07/23/2013</u> (date)
Address	701 Columbus Street, Manitowoc, WI 54220		Type of Audit: <u>CGA</u> , IAA, RAA, <u>RATA</u>
		Emission Limit <u>0.36 lbs CO/mmbtu (30-day rolling ave.)</u>	
Manufacturer/Model Number	Stack Process	Total Source Operating Time in Quarter <u>1,782.65</u> (hrs)	
TEI Model: 48iCO S/N CMO8270019	S20 / B28	Pollutant <u>CO</u>	

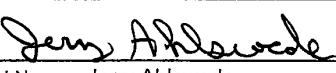
PART II. CAUSES OF EXCESS EMISSIONS (EE)		Duration of EE (hrs)	% of Operating Time ¹
A. Startup/Shutdown		0	0%
		0	0%
		0	0%
		0	0%
		0	0%
		0	0%
	G. Total (A + B + ...F)	0	² 0%

PART III. CAUSES OF CEMS DOWNTIME		Downtime (hrs)	% of Operating Time ¹
A. Monitor Equipment Malfunction		0	0%
		0	0%
	C. QA/QC Calibration	3.0	0.17%
	D. Other Known Causes	0	0%
	E. Unknown Causes	0	0%
	F. Total (A + B + ...E)	3.0	² 0.17%

¹ [EE (hrs) or Downtime (hrs) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature	Title
	Energy Supply and Production Supervisor
Printed/Typed Name	Phone Number (incl. Area Code)
Jerry Ahlsweide	(920) 686-4211
	Date Signed
	10-24-2013

LEAVE BLANK - FOR DNR USE ONLY

Recommendation	DNR Reviewer
	Date Reviewed

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 07/01/2013 Through 07/31/2013

Source: S20 **Standard Limit:** 0.36
Parameter: S20CO#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
07/01/13	15	15	0.170	30	657	0.060
07/02/13	24	24	0.048	30	669	0.059
07/03/13	24	24	0.035	30	679	0.059
07/04/13	24	24	0.043	30	679	0.059
07/05/13	24	24	0.031	30	679	0.059
07/06/13	24	24	0.052	30	679	0.060
07/07/13	24	24	0.043	30	682	0.060
07/08/13	24	24	0.035	30	688	0.052
07/09/13	24	24	0.065	30	689	0.053
07/10/13	24	24	0.049	30	699	0.051
07/11/13	24	24	0.052	30	702	0.051
07/12/13	24	24	0.041	30	707	0.052
07/13/13	24	24	0.032	30	707	0.053
07/14/13	24	24	0.077	30	707	0.055
07/15/13	24	24	0.025	30	707	0.055
07/16/13	24	24	0.015	30	707	0.054
07/17/13	24	24	0.017	30	707	0.054
07/18/13	24	24	0.071	30	707	0.055
07/19/13	24	24	0.062	30	707	0.056
07/20/13	24	24	0.049	30	707	0.056
07/21/13	24	24	0.062	30	708	0.056
07/22/13	24	24	0.136	30	708	0.058
07/23/13	24	24	0.167	30	708	0.060
07/24/13	24	24	0.065	30	708	0.059
07/25/13	24	24	0.087	30	708	0.060
07/26/13	21	21	0.040	30	705	0.059
07/27/13	0	0	F	30	705	0.059 F
07/28/13	0	0	F	30	705	0.059 F
07/29/13	9	9	0.152	30	690	0.061
07/30/13	16	16	0.107	30	682	0.064
07/31/13	24	24	0.059	30	682	0.064

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 08/01/2013 Through 08/31/2013

Source: S20

Standard Limit:

0.36

Parameter: S20CO#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
08/01/13	24	24	0.028	30	685	0.064
08/02/13	21	21	0.016	30	691	0.059
08/03/13	0	0	F	30	691	0.059 F
08/04/13	0	0	F	30	691	0.059 F
08/05/13	20	20	0.042	30	687	0.058
08/06/13	24	24	0.028	30	687	0.058
08/07/13	23	23	0.505	30	686	0.074
08/08/13	24	24	0.025	30	686	0.073
08/09/13	24	24	0.022	30	686	0.072
08/10/13	21	21	0.011	30	683	0.071
08/11/13	20	20	0.121	30	679	0.074
08/12/13	24	24	0.023	30	679	0.073
08/13/13	24	24	0.013	30	679	0.072
08/14/13	24	24	0.006	30	679	0.070
08/15/13	21	21	0.014	30	676	0.069
08/16/13	18	18	0.162	30	670	0.074
08/17/13	17	17	0.159	30	663	0.076
08/18/13	17	17	0.023	30	656	0.076
08/19/13	24	24	0.016	30	656	0.076
08/20/13	24	24	0.024	30	656	0.076
08/21/13	24	24	0.046	30	656	0.076
08/22/13	24	24	0.052	30	656	0.075
08/23/13	13	13	0.051	30	645	0.075
08/24/13	0	0	F	30	645	0.075 F
08/25/13	0	0	F	30	645	0.075 F
08/26/13	19	17	0.045	30	638	0.075
08/27/13	24	24	0.050	30	638	0.072
08/28/13	24	24	0.043	30	638	0.068
08/29/13	24	24	0.046	30	638	0.067
08/30/13	24	24	0.033	30	638	0.065
08/31/13	21	21	0.057	30	638	0.066

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 09/01/2013 Through 09/30/2013

Source: S20 **Standard Limit:** 0.36
Parameter: S20CO#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
09/01/13	16	16	0.065	30	645	0.063
09/02/13	0	0	F	30	645	0.063 F
09/03/13	16	16	0.110	30	645	0.063
09/04/13	24	24	0.071	30	645	0.064
09/05/13	24	24	0.055	30	645	0.064
09/06/13	24	24	0.042	30	648	0.065
09/07/13	24	24	0.029	30	652	0.065
09/08/13	24	24	0.018	30	652	0.065
09/09/13	24	24	0.050	30	653	0.049
09/10/13	24	24	0.047	30	653	0.050
09/11/13	24	24	0.032	30	653	0.050
09/12/13	23	23	0.040	30	655	0.051
09/13/13	15	15	0.452	30	650	0.062
09/14/13	20	20	0.084	30	646	0.064
09/15/13	0	0	F	30	646	0.064 F
09/16/13	0	0	F	30	646	0.064 F
09/17/13	9	9	0.040	30	631	0.065
09/18/13	19	19	0.158	30	626	0.070
09/19/13	24	24	0.049	30	629	0.072
09/20/13	21	21	0.065	30	632	0.068
09/21/13	0	0	F	30	632	0.068 F
09/22/13	0	0	F	30	632	0.068 F
09/23/13	19	19	0.063	30	634	0.065
09/24/13	24	23	0.043	30	640	0.066
09/25/13	24	24	0.034	30	640	0.066
09/26/13	24	24	0.028	30	640	0.067
09/27/13	24	24	0.029	30	640	0.066
09/28/13	21	21	0.056	30	637	0.066
09/29/13	17	17	0.074	30	641	0.067
09/30/13	24	24	0.040	30	648	0.067

F = Unit Offline

I = Invalid

E = Exceedance

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Excess Emission Report - SO₂/NO_x/TRS/H₂S/VOC/CO/Hg
Form 4500-126 (R 5/09)

Note: Completion of this form is required pursuant to chapter NR 439, Wis. Adm. Code.

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company	436035930 / Manitowoc Public Utilities		1 2 <input checked="" type="checkbox"/> 3 4 QTR. 2013 Cert. <u>CGA: 07-25-2013</u> (date) <u>RATA: 07/23-24/2013</u> (date)
Address	701 Columbus Street, Manitowoc, WI 54220		Type of Audit: <u>CGA</u> , IAA, RAA, <u>RATA</u>
		<u>Emission Limit</u> 0.30 lbs SO ₂ /mmBtu (30-day rolling ave.) 70% reduction of SO ₂ (30-day rolling ave.)	
Manufacturer/Model Number	Stack Process	Total Source Operating Time in Quarter <u>1,001.28</u> (hrs)	
TEI Model: 43iSO2 S/N 43i0510511567	S10 / B09	Pollutant <u>SO₂</u>	

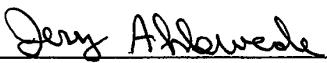
PART II. CAUSES OF EXCESS EMISSIONS (EE)		Duration of EE (hrs)	% of Operating Time ¹
A. Startup/Shutdown		0	0%
		0	0%
		0	0%
		0	0%
		0	0%
		0	0%
	G. Total (A + B + ...F)	0	² 0%

PART III. CAUSES OF CEMS DOWNTIME		Downtime (hrs)	% of Operating Time ¹
A. Monitor Equipment Malfunction		0	0%
		0	0%
	C. QA/QC Calibration	5.00	0.50%
	D. Other Known Causes	0	0%
	E. Unknown Causes	0	0%
	F. Total (A + B + ...E)	5.00	² 0.50%

¹ [EE (hrs) or Downtime (hrs) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature 	Title <u>Energy Supply and Production Supervisor</u>	
Printed/Typed Name <u>Jerry Ahlsweide</u>	Phone Number (incl. Area Code) <u>(920) 686-4211</u>	Date Signed <u>10-24-2013</u>

LEAVE BLANK - FOR DNR USE ONLY

Recommendation	DNR Reviewer _____
	Date Reviewed _____

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 07/01/2013 Through 07/31/2013

Source:

B9

Standard Limit:

0.3

Parameter:

B9SO2#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
07/01/13	0	0	F	29	628	0.228 F
07/02/13	0	0	F	29	628	0.228 F
07/03/13	0	0	F	29	628	0.228 F
07/04/13	0	0	F	29	628	0.228 F
07/05/13	0	0	F	29	628	0.228 F
07/06/13	0	0	F	29	628	0.228 F
07/07/13	6	6	0.000	29	630	0.228
07/08/13	24	24	0.326	29	630	0.231
07/09/13	24	24	0.243	29	630	0.231
07/10/13	24	24	0.234	29	630	0.234
07/11/13	24	24	0.193	29	643	0.236
07/12/13	24	24	0.243	30	667	0.237
07/13/13	24	24	0.242	30	668	0.241
07/14/13	24	24	0.245	30	681	0.237
07/15/13	24	24	0.244	30	693	0.238
07/16/13	24	24	0.245	30	700	0.229
07/17/13	24	24	0.246	30	700	0.229
07/18/13	24	24	0.239	30	700	0.229
07/19/13	24	24	0.236	30	700	0.229
07/20/13	24	24	0.246	30	700	0.229
07/21/13	24	24	0.269	30	700	0.230
07/22/13	24	24	0.224	30	700	0.229
07/23/13	24	21	0.203	30	697	0.228
07/24/13	24	24	0.238	30	697	0.229
07/25/13	24	22	0.283	30	695	0.231
07/26/13	0	0	F	30	695	0.231 F
07/27/13	0	0	F	30	695	0.231 F
07/28/13	0	0	F	30	695	0.231 F
07/29/13	4	4	0.000	30	675	0.223
07/30/13	24	24	0.327	30	675	0.226
07/31/13	24	24	0.233	30	675	0.226

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 08/01/2013 Through 08/31/2013

Source:

B9

Standard Limit:

0.3

Parameter:

B9SO2#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
08/01/13	24	24	0.233	30	675	0.226
08/02/13	16	16	0.241	30	667	0.226
08/03/13	0	0	F	30	667	0.226 F
08/04/13	0	0	F	30	667	0.226 F
08/05/13	0	0	F	30	667	0.226 F
08/06/13	0	0	F	30	667	0.226 F
08/07/13	20	20	0.299	30	663	0.229
08/08/13	24	24	0.208	30	663	0.229
08/09/13	8	8	0.176	30	647	0.228
08/10/13	0	0	F	30	647	0.228 F
08/11/13	0	0	F	30	647	0.228 F
08/12/13	0	0	F	30	647	0.228 F
08/13/13	0	0	F	30	647	0.228 F
08/14/13	0	0	F	30	647	0.228 F
08/15/13	0	0	F	30	647	0.228 F
08/16/13	0	0	F	30	647	0.228 F
08/17/13	0	0	F	30	647	0.228 F
08/18/13	0	0	F	30	647	0.228 F
08/19/13	0	0	F	30	647	0.228 F
08/20/13	3	3	0.000	30	626	0.220
08/21/13	24	24	0.192	30	626	0.219
08/22/13	24	24	0.245	30	628	0.218
08/23/13	24	24	0.244	30	646	0.226
08/24/13	24	24	0.215	30	646	0.223
08/25/13	24	24	0.228	30	646	0.222
08/26/13	24	24	0.243	30	646	0.223
08/27/13	24	24	0.235	30	646	0.224
08/28/13	24	24	0.234	30	646	0.224
08/29/13	24	24	0.245	30	646	0.224
08/30/13	24	24	0.251	30	646	0.224
08/31/13	23	23	0.266	30	645	0.225

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 09/01/2013 Through 09/30/2013

Source:

B9

Standard Limit:

0.3

Parameter:

B9SO2#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
09/01/13	0	0	F	30	645	0.225 F
09/02/13	0	0	F	30	645	0.225 F
09/03/13	0	0	F	30	645	0.225 F
09/04/13	0	0	F	30	645	0.225 F
09/05/13	0	0	F	30	645	0.225 F
09/06/13	1	1	0.000	30	622	0.217
09/07/13	0	0	F	30	622	0.217 F
09/08/13	5	5	0.000	30	603	0.208
09/09/13	24	24	0.295	30	603	0.210
09/10/13	24	24	0.245	30	603	0.211
09/11/13	24	24	0.245	30	603	0.211
09/12/13	24	24	0.239	30	603	0.210
09/13/13	22	22	0.242	30	601	0.210
09/14/13	0	0	F	30	601	0.210 F
09/15/13	0	0	F	30	601	0.210 F
09/16/13	0	0	F	30	601	0.210 F
09/17/13	0	0	F	30	601	0.210 F
09/18/13	0	0	F	30	601	0.210 F
09/19/13	0	0	F	30	601	0.210 F
09/20/13	0	0	F	30	601	0.210 F
09/21/13	0	0	F	30	601	0.210 F
09/22/13	0	0	F	30	601	0.210 F
09/23/13	0	0	F	30	601	0.210 F
09/24/13	0	0	F	30	601	0.210 F
09/25/13	0	0	F	30	601	0.210 F
09/26/13	0	0	F	30	601	0.210 F
09/27/13	0	0	F	30	601	0.210 F
09/28/13	0	0	F	30	601	0.210 F
09/29/13	5	5	0.001	30	585	0.203
09/30/13	24	24	0.294	30	585	0.205

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 07/01/2013 Through 07/31/2013

Source: B9

Parameter: B9SO2RED

Standard Limit:

Low Limit: 90

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
07/01/13	0	0	F	29	628	96.1 F
07/02/13	0	0	F	29	628	96.1 F
07/03/13	0	0	F	29	628	96.1 F
07/04/13	0	0	F	29	628	96.1 F
07/05/13	0	0	F	29	628	96.1 F
07/06/13	0	0	F	29	628	96.1 F
07/07/13	6	6	100.0	29	630	96.1
07/08/13	24	24	94.8	29	630	96.1
07/09/13	24	24	96.4	29	630	96.2
07/10/13	24	24	96.1	29	630	96.2
07/11/13	24	24	97.0	29	643	96.2
07/12/13	24	24	96.2	30	667	96.2
07/13/13	24	24	96.1	30	668	96.2
07/14/13	24	24	96.8	30	681	96.4
07/15/13	24	24	96.8	30	693	96.4
07/16/13	24	24	96.8	30	700	96.6
07/17/13	24	24	96.7	30	700	96.6
07/18/13	24	24	96.8	30	700	96.6
07/19/13	24	24	96.9	30	700	96.6
07/20/13	24	24	96.5	30	700	96.6
07/21/13	24	24	96.2	30	700	96.6
07/22/13	24	24	96.5	30	700	96.6
07/23/13	24	21	96.9	30	697	96.7
07/24/13	24	24	96.4	30	697	96.6
07/25/13	24	22	95.7	30	695	96.6
07/26/13	0	0	F	30	695	96.6 F
07/27/13	0	0	F	30	695	96.6 F
07/28/13	0	0	F	30	695	96.6 F
07/29/13	4	4	100.0	30	675	96.7
07/30/13	24	24	94.7	30	675	96.7
07/31/13	24	24	96.3	30	675	96.7

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 08/01/2013 Through 08/31/2013

Source:	B9	Standard Limit:				
		Low Limit:		90		
Parameter:	30 - Day					
	Daily			30 - Day		
Date	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	
08/01/13	24	24	96.3	30	675	96.7
08/02/13	16	16	96.1	30	667	96.6
08/03/13	0	0	F	30	667	96.6 F
08/04/13	0	0	F	30	667	96.6 F
08/05/13	0	0	F	30	667	96.6 F
08/06/13	0	0	F	30	667	96.6 F
08/07/13	20	20	94.9	30	663	96.6
08/08/13	24	24	96.5	30	663	96.6
08/09/13	8	8	96.7	30	647	96.6
08/10/13	0	0	F	30	647	96.6 F
08/11/13	0	0	F	30	647	96.6 F
08/12/13	0	0	F	30	647	96.6 F
08/13/13	0	0	F	30	647	96.6 F
08/14/13	0	0	F	30	647	96.6 F
08/15/13	0	0	F	30	647	96.6 F
08/16/13	0	0	F	30	647	96.6 F
08/17/13	0	0	F	30	647	96.6 F
08/18/13	0	0	F	30	647	96.6 F
08/19/13	0	0	F	30	647	96.6 F
08/20/13	3	3	100.0	30	626	96.7
08/21/13	24	24	97.0	30	626	96.7
08/22/13	24	24	96.1	30	628	96.7
08/23/13	24	24	96.1	30	646	96.5
08/24/13	24	24	96.3	30	646	96.6
08/25/13	24	24	96.6	30	646	96.6
08/26/13	24	24	96.0	30	646	96.6
08/27/13	24	24	96.4	30	646	96.6
08/28/13	24	24	96.4	30	646	96.6
08/29/13	24	24	96.1	30	646	96.6
08/30/13	24	24	96.0	30	646	96.6
08/31/13	23	23	96.4	30	645	96.6

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 09/01/2013 Through 09/30/2013

Source:	B9	Standard Limit:					
		Low Limit: 90					
Parameter:	B9SO2RED	Daily				30 - Day	
		Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
09/01/13		0	0		F	30	645
09/02/13		0	0		F	30	645
09/03/13		0	0		F	30	645
09/04/13		0	0		F	30	645
09/05/13		0	0		F	30	645
09/06/13		1	1	100.0		30	622
09/07/13		0	0		F	30	622
09/08/13		5	5	100.0		30	603
09/09/13		24	24	95.6		30	603
09/10/13		24	24	96.0		30	603
09/11/13		24	24	96.0		30	603
09/12/13		24	24	95.7		30	603
09/13/13		22	22	95.8		30	601
09/14/13		0	0		F	30	601
09/15/13		0	0		F	30	601
09/16/13		0	0		F	30	601
09/17/13		0	0		F	30	601
09/18/13		0	0		F	30	601
09/19/13		0	0		F	30	601
09/20/13		0	0		F	30	601
09/21/13		0	0		F	30	601
09/22/13		0	0		F	30	601
09/23/13		0	0		F	30	601
09/24/13		0	0		F	30	601
09/25/13		0	0		F	30	601
09/26/13		0	0		F	30	601
09/27/13		0	0		F	30	601
09/28/13		0	0		F	30	601
09/29/13		5	5	100.0		30	585
09/30/13		24	24	95.4		30	585

F = Unit Offline

I = Invalid

E = Exceedance

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Excess Emission Report - SO₂/NO_x/TRS/H₂S/VOC/CO/Hg

Form 4500-126 (R 5/09)

Date Received by DNR

Note: Completion of this form is required pursuant to chapter NR 439, Wis. Adm. Code.

PART I. FACILITY INFORMATION

FID/Name of Company	436035930 / Manitowoc Public Utilities	1 2 [3] 4 QTR. 2013 Cert. <u>CGA: 07-25-2013</u> (date) <u>RATA: 07/23-24/2013</u> (date)
Address	701 Columbus Street, Manitowoc, WI 54220	Type of Audit: <u>CGA</u> , <u>IAA</u> , <u>RAA</u> , <u>RATA</u>
Manufacturer/Model Number	Stack Process	Emission Limit <u>0.155 lbs NOx/mmBtu (30-day rolling ave.)</u>
TEI Model: 42iNOx S/N 42i0510511562	S10 / B09	Total Source Operating Time in Quarter <u>1,001.28</u> (hrs) Pollutant <u>NOx</u>

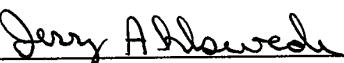
PART II. CAUSES OF EXCESS EMISSIONS (EE)		Duration of EE (hrs)	% of Operating Time ¹
A.	Startup/Shutdown	0	0%
B.	Process Malfunction	0	0%
C.	Control Equipment Malfunction	0	0%
D.	Fuel Problems	0	0%
E.	Other Known Causes	0	0%
F.	Unknown Causes	0	0%
G.	Total (A + B + ...F)	0	² 0%

PART III. CAUSES OF CEMS DOWNTIME		Downtime (hrs)	% of Operating Time ¹
A.	Monitor Equipment Malfunction	0	0%
B.	Non-Monitor Equipment Malfunction	0	0%
C	QA/QC Calibration	10.00	1.00%
D	Other Known Causes	0	0%
E	Unknown Causes	0	0%
F	Total (A + B + ...E)	10.00	² 1.00%

¹ [EE (hrs) or Downtime (hrs) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature		Title	Energy Supply and Production Supervisor
Printed/Typed Name	Jerry Ahlsweide	Phone Number (incl. Area Code) (920) 686-4211	Date Signed <u>10-24-2013</u>

LEAVE BLANK - FOR DNR USE ONLY

Recommendation	DNR Reviewer _____
	Date Reviewed _____

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 07/01/2013 Through 07/31/2013

Source:

B9

Standard Limit:

0.15

Parameter:

B9NOX#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
07/01/13	0	0	F	29	627	0.073 F
07/02/13	0	0	F	29	627	0.073 F
07/03/13	0	0	F	29	627	0.073 F
07/04/13	0	0	F	29	627	0.073 F
07/05/13	0	0	F	29	627	0.073 F
07/06/13	0	0	F	29	627	0.073 F
07/07/13	6	6	0.038	29	629	0.072
07/08/13	24	24	0.048	29	629	0.070
07/09/13	24	24	0.034	29	629	0.067
07/10/13	24	24	0.050	29	629	0.065
07/11/13	24	24	0.056	29	642	0.062
07/12/13	24	24	0.046	30	666	0.062
07/13/13	24	24	0.047	30	667	0.058
07/14/13	24	24	0.039	30	680	0.054
07/15/13	24	24	0.040	30	692	0.051
07/16/13	24	24	0.039	30	699	0.048
07/17/13	24	24	0.043	30	699	0.046
07/18/13	24	24	0.042	30	699	0.044
07/19/13	24	24	0.059	30	699	0.044
07/20/13	24	24	0.058	30	699	0.045
07/21/13	24	24	0.082	30	699	0.047
07/22/13	24	24	0.068	30	700	0.048
07/23/13	24	22	0.073	30	698	0.049
07/24/13	24	24	0.075	30	698	0.049
07/25/13	24	22	0.096	30	696	0.050
07/26/13	0	0	F	30	696	0.050 F
07/27/13	0	0	F	30	696	0.050 F
07/28/13	0	0	F	30	696	0.050 F
07/29/13	4	4	0.049	30	676	0.050
07/30/13	24	18	0.044	30	670	0.050
07/31/13	24	24	0.040	30	670	0.050

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 08/01/2013 Through 08/31/2013

Source:

B9

Standard Limit:

0.15

Parameter:

B9NOX#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
08/01/13	24	24	0.043	30	670	0.050
08/02/13	16	16	0.034	30	662	0.049
08/03/13	0	0	F	30	662	0.049 F
08/04/13	0	0	F	30	662	0.049 F
08/05/13	0	0	F	30	662	0.049 F
08/06/13	0	0	F	30	662	0.049 F
08/07/13	20	20	0.037	30	658	0.049
08/08/13	24	24	0.050	30	658	0.049
08/09/13	8	8	0.064	30	642	0.050
08/10/13	0	0	F	30	642	0.050 F
08/11/13	0	0	F	30	642	0.050 F
08/12/13	0	0	F	30	642	0.050 F
08/13/13	0	0	F	30	642	0.050 F
08/14/13	0	0	F	30	642	0.050 F
08/15/13	0	0	F	30	642	0.050 F
08/16/13	0	0	F	30	642	0.050 F
08/17/13	0	0	F	30	642	0.050 F
08/18/13	0	0	F	30	642	0.050 F
08/19/13	0	0	F	30	642	0.050 F
08/20/13	3	3	0.037	30	621	0.050
08/21/13	24	24	0.034	30	621	0.050
08/22/13	24	24	0.030	30	623	0.050
08/23/13	24	24	0.041	30	641	0.050
08/24/13	24	24	0.032	30	641	0.049
08/25/13	24	24	0.034	30	641	0.049
08/26/13	24	24	0.034	30	641	0.049
08/27/13	24	24	0.029	30	641	0.048
08/28/13	24	24	0.037	30	641	0.048
08/29/13	24	24	0.041	30	641	0.047
08/30/13	24	24	0.052	30	641	0.048
08/31/13	23	23	0.049	30	640	0.048

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 09/01/2013 Through 09/30/2013

Source: B9

Standard Limit:

0.15

Parameter: B9NOX#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
09/01/13	0	0	F	30	640	0.048 F
09/02/13	0	0	F	30	640	0.048 F
09/03/13	0	0	F	30	640	0.048 F
09/04/13	0	0	F	30	640	0.048 F
09/05/13	0	0	F	30	640	0.048 F
09/06/13	1	1	0.013	30	617	0.047
09/07/13	0	0	F	30	617	0.047 F
09/08/13	5	5	0.053	30	598	0.048
09/09/13	24	24	0.034	30	598	0.047
09/10/13	24	24	0.029	30	598	0.046
09/11/13	24	24	0.026	30	598	0.045
09/12/13	24	24	0.040	30	598	0.044
09/13/13	22	22	0.061	30	596	0.044
09/14/13	0	0	F	30	596	0.044 F
09/15/13	0	0	F	30	596	0.044 F
09/16/13	0	0	F	30	596	0.044 F
09/17/13	0	0	F	30	596	0.044 F
09/18/13	0	0	F	30	596	0.044 F
09/19/13	0	0	F	30	596	0.044 F
09/20/13	0	0	F	30	596	0.044 F
09/21/13	0	0	F	30	596	0.044 F
09/22/13	0	0	F	30	596	0.044 F
09/23/13	0	0	F	30	596	0.044 F
09/24/13	0	0	F	30	596	0.044 F
09/25/13	0	0	F	30	596	0.044 F
09/26/13	0	0	F	30	596	0.044 F
09/27/13	0	0	F	30	596	0.044 F
09/28/13	0	0	F	30	596	0.044 F
09/29/13	5	5	0.053	30	579	0.043
09/30/13	24	24	0.048	30	579	0.042

F = Unit Offline

I = Invalid

E = Exceedance

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Excess Emission Report - SO₂/NO_x/TRS/H₂S/VOC/CO/Hg
Form 4500-126 (R 5/09)

Note: Completion of this form is required pursuant to chapter NR 439, Wis. Adm. Code.

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company	436035930 / Manitowoc Public Utilities		1 2 <input checked="" type="checkbox"/> 3 4 QTR. 2013 Cert. <u>CGA: 07-25-2013</u> (date) <u>RATA: 07/23-24/2013</u> (date)
Address	701 Columbus Street, Manitowoc, WI 54220		Type of Audit: <u>CGA</u> , IAA, RAA, <u>RATA</u>
		Emission Limit <u>0.15 lbs CO/mmBtu (30-day rolling ave.)</u>	
Manufacturer/Model Number	Stack Process	Total Source Operating Time in Quarter <u>945.37</u> (hrs)	
TEI Model: 48iCO S/N 48i0510511587	S10 / B09	Pollutant <u>CO</u>	

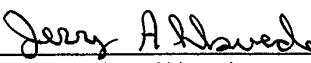
PART II. CAUSES OF EXCESS EMISSIONS (EE)		Duration of EE (hrs)	% of Operating Time ¹
A. Startup/Shutdown		0	0%
		0	0%
		0	0%
		0	0%
		0	0%
		0	0%
	G. Total (A + B + ...F)	0	² 0%

PART III. CAUSES OF CEMS DOWNTIME		Downtime (hrs)	% of Operating Time ¹
A. Monitor Equipment Malfunction		0	0%
		0	0%
	C. QA/QC Calibration	4.00	0.42%
	D. Other Known Causes	1.62	0.17%
	E. Unknown Causes	0	0%
	F. Total (A + B + ...E)	5.62	² 0.59%

¹ [EE (hrs) or Downtime (hrs) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature 	Title Energy Supply and Production Supervisor	
Printed/Typed Name Jerry Ahlsweide	Phone Number (incl. Area Code) (920) 686-4211	Date Signed 10-24-2013

LEAVE BLANK - FOR DNR USE ONLY

Recommendation

DNR Reviewer _____

Date Reviewed _____

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 07/01/2013 Through 07/31/2013

Source:

B9

Standard Limit:

0.15

Parameter:

B9CO#M

Date	Daily			30 - Day			
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average	
07/01/13	0	0		F	30	620	0.026 F
07/02/13	0	0		F	30	620	0.026 F
07/03/13	0	0		F	30	620	0.026 F
07/04/13	0	0		F	30	620	0.026 F
07/05/13	0	0		F	30	620	0.026 F
07/06/13	0	0		F	30	620	0.026 F
07/07/13	0	0		F	30	620	0.026 F
07/08/13	18	18	0.019	30	614		0.026
07/09/13	24	24	0.017	30	627		0.025
07/10/13	24	24	0.023	30	635		0.025
07/11/13	24	24	0.017	30	635		0.025
07/12/13	24	24	0.017	30	635		0.024
07/13/13	24	24	0.012	30	648		0.023
07/14/13	24	24	0.018	30	662		0.020
07/15/13	24	24	0.017	30	676		0.020
07/16/13	24	24	0.011	30	696		0.019
07/17/13	24	24	0.010	30	712		0.018
07/18/13	24	24	0.008	30	712		0.018
07/19/13	24	24	0.009	30	712		0.017
07/20/13	24	24	0.010	30	712		0.017
07/21/13	24	24	0.010	30	712		0.017
07/22/13	24	24	0.009	30	712		0.017
07/23/13	24	22	0.010	30	710		0.017
07/24/13	24	24	0.013	30	710		0.017
07/25/13	24	22	0.038	30	708		0.018
07/26/13	0	0		F	30	708	0.018 F
07/27/13	0	0		F	30	708	0.018 F
07/28/13	0	0		F	30	708	0.018 F
07/29/13	0	0		F	30	708	0.018 F
07/30/13	20	20	0.018	30	704		0.018
07/31/13	24	24	0.016	30	704		0.018

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 08/01/2013 Through 08/31/2013

Source: B9
Parameter: B9CO#M

Standard Limit: 0.15

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
08/01/13	24	24	0.020	30	704	0.018
08/02/13	16	16	0.021	30	696	0.018
08/03/13	0	0	F	30	696	0.018 F
08/04/13	0	0	F	30	696	0.018 F
08/05/13	0	0	F	30	696	0.018 F
08/06/13	0	0	F	30	696	0.018 F
08/07/13	12	12	0.018	30	684	0.018
08/08/13	24	24	0.037	30	684	0.019
08/09/13	8	8	0.042	30	668	0.019
08/10/13	0	0	F	30	668	0.019 F
08/11/13	0	0	F	30	668	0.019 F
08/12/13	0	0	F	30	668	0.019 F
08/13/13	0	0	F	30	668	0.019 F
08/14/13	0	0	F	30	668	0.019 F
08/15/13	0	0	F	30	668	0.019 F
08/16/13	0	0	F	30	668	0.019 F
08/17/13	0	0	F	30	668	0.019 F
08/18/13	0	0	F	30	668	0.019 F
08/19/13	0	0	F	30	668	0.019 F
08/20/13	0	0	F	30	668	0.019 F
08/21/13	17	16	0.010	30	660	0.018
08/22/13	24	24	0.014	30	660	0.018
08/23/13	24	24	0.015	30	660	0.018
08/24/13	24	24	0.027	30	660	0.018
08/25/13	24	24	0.038	30	662	0.018
08/26/13	24	24	0.025	30	668	0.018
08/27/13	24	24	0.018	30	668	0.018
08/28/13	24	24	0.014	30	668	0.018
08/29/13	24	24	0.022	30	668	0.018
08/30/13	24	24	0.021	30	668	0.018
08/31/13	23	23	0.024	30	667	0.019

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 09/01/2013 Through 09/30/2013

Source: B9
Parameter: B9CO#M

Standard Limit: 0.15

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
09/01/13	0	0		F	30	667
09/02/13	0	0		F	30	667
09/03/13	0	0		F	30	667
09/04/13	0	0		F	30	667
09/05/13	0	0		F	30	667
09/06/13	0	0		F	30	667
09/07/13	0	0		F	30	667
09/08/13	0	0		F	30	667
09/09/13	21	20	0.011		30	663
09/10/13	24	24	0.010		30	663
09/11/13	24	24	0.009		30	663
09/12/13	24	24	0.008		30	663
09/13/13	22	22	0.014		30	661
09/14/13	0	0		F	30	661
09/15/13	0	0		F	30	661
09/16/13	0	0		F	30	661
09/17/13	0	0		F	30	661
09/18/13	0	0		F	30	661
09/19/13	0	0		F	30	661
09/20/13	0	0		F	30	661
09/21/13	0	0		F	30	661
09/22/13	0	0		F	30	661
09/23/13	0	0		F	30	661
09/24/13	0	0		F	30	661
09/25/13	0	0		F	30	661
09/26/13	0	0		F	30	661
09/27/13	0	0		F	30	661
09/28/13	0	0		F	30	661
09/29/13	0	0		F	30	661
09/30/13	20	20	0.028		30	657

F = Unit Offline

I = Invalid

E = Exceedance



MANITOWOC PUBLIC UTILITIES

1303 South 8th Street P.O. Box 1090 Manitowoc, WI 54221-1090 920-683-4600 FAX 920-686-4348 www.mpu.org

3rd Quarter 2013 Results Quarterly Audits Manitowoc Public Utilities Manitowoc, Wisconsin

Results of Calibration Error Test
Federal Register Part 60 Appendix B
Performance Specification 1
Continuous Emission Monitoring Systems
in Stationary Sources
at
Manitowoc Public Utilities
Manitowoc, Wisconsin



MANITOWOC PUBLIC UTILITIES

1303 South 8th Street P.O. Box 1090 Manitowoc, WI 54221-1090 920-683-4600 FAX 920-686-4348 www.mpu.org

S10 OPACITY Calibration Error Test Results:

Low Range - Allowed 3.0% Actual = 0.31%
Mid Range - Allowed 3.0% Actual = 0.39%
High Range - Allowed 3.0% Actual = 0.53%

S20 OPACITY Calibration Error Test Results:

Low Range - Allowed 3.0% Actual = 0.11%
Mid Range - Allowed 3.0% Actual = 0.24%
High Range - Allowed 3.0% Actual = 0.08%

BOILER #8/S20 CEMS Calibration Error Test Results:

ESC8832 Dilution Extractive System

Nox Low Range - Low Allowed 15%, Actual = 1.80%
Nox Low Range - Mid Allowed 15%, Actual = 2.20%
Nox High Range - Low Allowed 15%, Actual = 2.10%
Nox High Range - Mid Allowed 15%, Actual = 0.40%
So2 Low Range - Low Allowed 15%, Actual = 2.10%
So2 Low Range - Mid Allowed 15%, Actual = 0.40%
So2 High Range - Low Allowed 15%, Actual = 1.00%
So2 High Range - Mid Allowed 15%, Actual = 0.40%
Co2 - Low Range Allowed 15%, Actual = 0.01%
Co2 - Mid Range Allowed 15%, Actual = 0.30%
CO Low Range - Mid Allowed 15%, Actual = 1.80%
CO Low Range - High Allowed 15%, Actual = 2.10%
CO High Range - Mid Allowed 15%, Actual = 0.60%
CO High Range - High Allowed 15%, Actual = 0.40%

BOILER #9 CEMS Calibration Error Test Results:

ESC8832 Dilution Extractive System

Nox Low Range - Low Allowed 15%, Actual = 0.30%
Nox Low Range - Mid Allowed 15%, Actual = 0.50%
Nox High Range - Low Allowed 15%, Actual = 0.10%
Nox High Range - Mid Allowed 15%, Actual = 0.40%
So2 Low Range - Low Allowed 15%, Actual = 0.10%
So2 Low Range - Mid Allowed 15%, Actual = 0.80%
So2 High Range - Low Allowed 15%, Actual = 1.80%
So2 High Range - Mid Allowed 15%, Actual = 1.00%
Co2 - Low Range Allowed 15%, Actual = 0.01%
Co2 - Mid Range Allowed 15%, Actual = 0.90%
CO Low Range - Mid Allowed 15%, Actual = 1.30%
CO Low Range - High Allowed 15%, Actual = 5.70%
CO High Range - Mid Allowed 15%, Actual = 0.40%
CO High Range - High Allowed 15%, Actual = 0.10%



MANITOWOC PUBLIC UTILITIES

1303 South 8th Street P.O. Box 1090 Manitowoc, WI 54221-1090 920-683-4600 FAX 920-686-4348 www.mpu.org

Certification Sheet

Having supervised and worked on the test programs described in these reports, and having written these reports, I hereby certify the data, information, and results in these reports to be accurate and true according to the methods and procedures used. Data collected under the supervision of others is included in these reports and is presumed to have been gathered in accordance with recognized standards.

Timothy Hardig
Control Instrument Technician (CIT)

Reviewed by:

Brian Fassbender
Plant Environmental Contact (PEC)
Jerry Ahlsweide
Central Cems Contact (CCC)

Manitowoc Public Utilities

Summary of Results Federal Register Part 60 Appendix B Performance Specification 1 Continuous Emission Monitoring Systems in Stationary Sources

S-10 OPACITY - QUARTERLY CALIBRATION ERROR TEST

Person Conducting Test: Tim Harding

Analyzer Mfr: United Science Inc.

Affiliation: Manitowoc Public Utilities

Model/Serial No: 550 / S.N.5500035

Date: 9/10/2013

Location: Manitowoc Public Utilities / S10

Monitor Path Length, L: 188"

Emission Outlet Path Length L2: 144"

System Output Path Length Corrected? Yes No OPLR = .38 TAPER RATIO = 0.766

Calibrated Neutral Density Filter Values:

Actual Optical Density (% Opacity):

Low-Range	0.0778	16.5
Mid-Range	0.1305	25.9
High-Range	0.2629	45.5

Path Adjusted Optical Density (% Opacity):

Low-Range	12.9
Mid-Range	20.5
High-Range	37.2

Run Number	Calibration Filter Value	Instrument Reading	Arithmetic Difference		
			Low	Mid	High
(Path-Adjusted Percent Opacity)	(Opacity), Percent				
1 - Low	12.9	13.1	-0.20	--	--
2 - Mid	20.5	20.8	--	-0.28	--
3 - High	37.2	37.7	--	--	-0.52
4 - Low	12.9	13.2	-0.30	--	--
5 - Mid	20.5	20.9	--	-0.38	--
6 - High	37.2	37.6	--	--	-0.42
7 - Low	12.9	13.1	-0.20	--	--
8 - Mid	20.5	20.9	--	-0.38	--
9 - High	37.2	37.6	--	--	-0.42
10 - Low	12.9	13.2	-0.30	--	--
11 - Mid	20.5	20.8	--	-0.28	--
12 - High	37.2	37.6	--	--	-0.42
13 - Low	12.9	13.1	-0.20	--	--
14 - Mid	20.5	20.8	--	-0.28	--
15 - High	37.2	37.7	--	--	-0.52
Arithmetic Mean			X	-0.24	-0.32
Confidence Coefficient			CC	0.07	0.07
Calibration Error			X + CC	0.31	0.39
					0.53

Calibration Error Test Results:

Low Range - Allowed 3.0% Actual = 0.31%

Mid Range - Allowed 3.0% Actual = 0.39%

High Range - Allowed 3.0% Actual = 0.53%

Manitowoc Public Utilities

Summary of Results Federal Register Part 60 Appendix B Performance Specification 1 Continuous Emission Monitoring Systems in Stationary Sources

S-20 OPACITY - QUARTERLY CALIBRATION ERROR TEST

Person Conducting Test: Tim Harding

Analyzer Mfr: United Science Inc

Affiliation: MPU

Model/Serial No: 550 / S.N. 5500219

Date: 9/10/2013

Location: Manitowoc Public Utilities / S20

Monitor Path Length, L: 168"

Emission Outlet Path Length L2: 168"

System Output Path Length Corrected? Yes No OPLR = .50 TAPER RATIO = 1.000

Calibrated Neutral Density Filter Values:

Actual Optical Density (% Opacity):

Low-Range	0.0778	16.5
Mid-Range	0.1305	25.9
High-Range	0.2629	45.5

Path Adjusted Optical Density (% Opacity):

Low-Range	16.5
Mid-Range	25.9
High-Range	45.5

Run Number	Calibration Filter Value	Instrument Reading	Arithmetic Difference		
			Low	Mid	High
(Path-Adjusted Percent Opacity)	(Opacity), Percent				
1 - Low	16.5	16.6	-0.10	--	--
2 - Mid	25.9	26.1	--	-0.20	--
3 - High	45.5	45.6	--	--	-0.10
4 - Low	16.5	16.5	0.00	--	--
5 - Mid	25.9	26.0	--	-0.10	--
6 - High	45.5	45.5	--	--	0.00
7 - Low	16.5	16.5	0.00	--	--
8 - Mid	25.9	26.1	--	-0.20	--
9 - High	45.5	45.5	--	--	0.00
10 - Low	16.5	16.5	0.00	--	--
11 - Mid	25.9	26.1	--	-0.20	--
12 - High	45.5	45.5	--	--	0.00
13 - Low	16.5	16.6	-0.10	--	--
14 - Mid	25.9	26.1	--	-0.20	--
15 - High	45.5	45.5	--	--	0.00
Arithmetic Mean			X	-0.04	-0.18
Confidence Coefficient			CC	0.07	0.06
Calibration Error			X + CC	0.11	0.24

Calibration Error Test Results:

Low Range - Allowed 3.0% Actual = 0.11%

Mid Range - Allowed 3.0% Actual = 0.24%

High Range - Allowed 3.0% Actual = 0.08%

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 07/01/2013 00:00 Through 09/11/2013 23:59

Source: S20
Parameter: S20NOXLO
System ID: X05
Component ID: P06
Span Value: 200.000
Span Scale Code: L

Test End Date/Time: 08/29/13 09:49

Test Number: XML (P06-Q3-2013-1) / EDR (1)

Reason for Test: Periodic Quality Assurance

Test Result: Pass

Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	
Low-Level					
08/29/13 07:40	51.700	51.500	0.200	0.4	Reference Mean: 51.700
08/29/13 08:54	51.700	50.500	1.200	2.3	Measured Mean: 50.767
08/29/13 09:39	51.700	50.300	1.400	2.7	Level Error: 1.8
					APS Indicator: False
					Gas Type Code: BALN,CO,NO,SO2
					Vendor Identifier: F12011
					Cylinder #: CC238857
					Cylinder Exp. Date: 09/17/2014

Injection Time	Reference Value	Measured Value	Difference	% of Reference	
Mid-Level					
08/29/13 07:45	107.300	109.700	-2.400	2.2	Reference Mean: 107.300
08/29/13 08:59	107.300	109.700	-2.400	2.2	Measured Mean: 109.633
08/29/13 09:44	107.300	109.500	-2.200	2.1	Level Error: 2.2
					APS Indicator: False
					Gas Type Code: BALN,CO,NO,SO2
					Vendor Identifier: F12011
					Cylinder #: CC234800
					Cylinder Exp. Date: 11/08/2014

Injection Time	Reference Value	Measured Value	Difference	% of Reference	
High-Level					
08/29/13 07:50	182.000	180.700	1.300	0.7	Reference Mean: 182.000
08/29/13 09:04	182.000	180.200	1.800	1.0	Measured Mean: 180.200
08/29/13 09:49	182.000	179.700	2.300	1.3	Level Error: 1.0
					APS Indicator: False
					Gas Type Code: BALN,CO,NO,SO2
					Vendor Identifier: F12011
					Cylinder #: SA18623
					Cylinder Exp. Date: 06/12/2014

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 07/01/2013 00:00 Through 09/11/2013 08:09

Source: S20
Parameter: S20NOXHI
System ID: X05
Component ID: P06
Span Value: 500.000
Span Scale Code: H

Test End Date/Time: 08/29/13 12:49
Test Number: XML (P06-Q3-2013-2) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 119.000 Measured Mean: 121.533 Level Error: 2.1 APS Indicator: False
Low-Level					
08/29/13 10:39	119.000	122.100	-3.100	2.6	
08/29/13 11:39	119.000	121.400	-2.400	2.0	
08/29/13 12:39	119.000	121.100	-2.100	1.8	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 280.700 Measured Mean: 279.667 Level Error: 0.4 APS Indicator: False
Mid-Level					
08/29/13 10:44	280.700	279.900	0.800	0.3	
08/29/13 11:44	280.700	280.000	0.700	0.2	
08/29/13 12:44	280.700	279.100	1.600	0.6	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 453.000 Measured Mean: 449.767 Level Error: 0.7 APS Indicator: False
High-Level					
08/29/13 10:49	453.000	450.000	3.000	0.7	
08/29/13 11:49	453.000	450.300	2.700	0.6	
08/29/13 12:49	453.000	449.000	4.000	0.9	

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 07/01/2013 00:00 Through 09/11/2013 23:59

Source: S20
Parameter: S20SO2LO
System ID:
Component ID: P05
Span Value: 400.000
Span Scale Code: L

Test End Date/Time: 08/29/13 09:49
Test Number: XML (P05-Q3-2013-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 100.900 Measured Mean: 98.733 Level Error: 2.1 APS Indicator: False Gas Type Code: BALN,CO,NO,SO2 Vendor Identifier: F12011 Cylinder #: CC238857 Cylinder Exp. Date: 09/17/2014
Low-Level					
08/29/13 07:40	100.900	99.200	1.700	1.7	
08/29/13 08:54	100.900	98.500	2.400	2.4	
08/29/13 09:39	100.900	98.500	2.400	2.4	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 218.900 Measured Mean: 218.000 Level Error: 0.4 APS Indicator: False Gas Type Code: BALN,CO,NO,SO2 Vendor Identifier: F12011 Cylinder #: CC234800 Cylinder Exp. Date: 11/08/2014
Mid-Level					
08/29/13 07:45	218.900	218.600	0.300	0.1	
08/29/13 08:59	218.900	218.100	0.800	0.4	
08/29/13 09:44	218.900	217.300	1.600	0.7	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 360.100 Measured Mean: 358.400 Level Error: 0.5 APS Indicator: False Gas Type Code: BALN,CO,NO,SO2 Vendor Identifier: F12011 Cylinder #: SA18623 Cylinder Exp. Date: 06/12/2014
High-Level					
08/29/13 07:50	360.100	357.200	2.900	0.8	
08/29/13 09:04	360.100	359.500	0.600	0.2	
08/29/13 09:49	360.100	358.500	1.600	0.4	

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 07/01/2013 00:00 Through 09/11/2013 08:09

Source: S20
Parameter: S20SO2HI
System ID:
Component ID: P05
Span Value: 4,000.000
Span Scale Code: H

Test End Date/Time: 08/29/13 12:49
Test Number: XML (P05-Q3-2013-2) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 1,011.000 Measured Mean: 1,000.733 Level Error: 1.0 APS Indicator: False
Low-Level					
08/29/13 10:39	1011.000	998.900	12.100	1.2	
08/29/13 11:39	1011.000	999.300	11.700	1.2	
08/29/13 12:39	1011.000	1004.000	7.000	0.7	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 2,133.000 Measured Mean: 2,124.200 Level Error: 0.4 APS Indicator: False
Mid-Level					
08/29/13 10:44	2133.000	2126.200	6.800	0.3	
08/29/13 11:44	2133.000	2116.700	16.300	0.8	
08/29/13 12:44	2133.000	2129.700	3.300	0.2	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 3,494.000 Measured Mean: 3,437.367 Level Error: 1.6 APS Indicator: False
High-Level					
08/29/13 10:49	3494.000	3442.900	51.100	1.5	
08/29/13 11:49	3494.000	3428.500	65.500	1.9	
08/29/13 12:49	3494.000	3440.700	53.300	1.5	

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 07/01/2013 00:00 Through 09/11/2013 08:09

Source: S20
Parameter: S20CPCO2
System ID: X09
Component ID: P04
Span Value: 20.000
Span Scale Code: H

Test End Date/Time: 08/29/13 12:49
Test Number: XML (P04-Q3-2013-2) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 5.600 Measured Mean: 5.600 Level Error: 0.0 APS Indicator: False
Low-Level					
08/29/13 10:39	5.600	5.600	0.000	0.0	
08/29/13 11:39	5.600	5.600	0.000	0.0	
08/29/13 12:39	5.600	5.600	0.000	0.0	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 11.300 Measured Mean: 11.267 Level Error: 0.3 APS Indicator: False
Mid-Level					
08/29/13 10:44	11.300	11.300	0.000	0.0	
08/29/13 11:44	11.300	11.300	0.000	0.0	
08/29/13 12:44	11.300	11.200	0.100	0.9	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 18.100 Measured Mean: 18.133 Level Error: 0.2 APS Indicator: False
High-Level					
08/29/13 10:49	18.100	18.200	-0.100	0.6	
08/29/13 11:49	18.100	18.100	0.000	0.0	
08/29/13 12:49	18.100	18.100	0.000	0.0	

Cylinder Gas Audit

Plant: Manitowoc Public Utilities

Report Period: 07/01/2013 00:00 Through 09/11/2013 23:59

Source: S20

Test Date/Time: 08/29/13 09:49

Parameter: S20PCOLO

Test Result: Pass

Instrument Span: 100.000

Aborted?: No

Time	CEMS Value	Audit Value	Difference	% of Audit Value	
Low-Level					
08/29/13 07:40	22.800	25.100	-2.300	-9.2	CEMS Mean (Cm): 22.900 Audit Mean (Ca): 25.100 Accuracy (A) in %: -8.8 Mean Difference: -2.2 APS Indicator: 0 Cylinder #: CC238857 Cylinder Exp. Date: 09/17/2014
08/29/13 08:54	22.200	25.100	-2.900	-11.6	
08/29/13 09:39	23.700	25.100	-1.400	-5.6	
Mid-Level					
08/29/13 07:45	53.100	54.200	-1.100	-2.0	CEMS Mean (Cm): 53.200 Audit Mean (Ca): 54.200 Accuracy (A) in %: -1.8 Mean Difference: -1.0 APS Indicator: 0 Cylinder #: CC234800 Cylinder Exp. Date: 11/08/2014
08/29/13 08:59	53.500	54.200	-0.700	-1.3	
08/29/13 09:44	53.000	54.200	-1.200	-2.2	
High-Level					
08/29/13 07:50	92.300	90.600	1.700	1.9	CEMS Mean (Cm): 92.500 Audit Mean (Ca): 90.600 Accuracy (A) in %: 2.1 Mean Difference: 1.9 APS Indicator: 0 Cylinder #: SA18623 Cylinder Exp. Date: 06/12/2014
08/29/13 09:04	92.400	90.600	1.800	2.0	
08/29/13 09:49	92.800	90.600	2.200	2.4	

Cylinder Gas Audit

Plant: Manitowoc Public Utilities

Report Period: 07/01/2013 00:00 Through 09/11/2013 23:59

Source: S20

Test Date/Time: 08/29/13 12:49

Parameter: S20PCOHI

Test Result: Pass

Instrument Span: 5000.000

Aborted?: No

Time	CEMS Value	Audit Value	Difference	% of Audit Value	
Low-Level					
08/29/13 10:39	1,252.200	1,259.000	-6.800	-0.5	CEMS Mean (Cm): 1251.600 Audit Mean (Ca): 1259.000 Accuracy (A) in %: -0.6 Mean Difference: -7.4 APS Indicator: 0 Cylinder #: Cylinder Exp. Date:
08/29/13 11:39	1,252.300	1,259.000	-6.700	-0.5	
08/29/13 12:39	1,250.300	1,259.000	-8.700	-0.7	
Mid-Level					
08/29/13 10:44	2,706.400	2,724.000	-17.600	-0.6	CEMS Mean (Cm): 2708.800 Audit Mean (Ca): 2724.000 Accuracy (A) in %: -0.6 Mean Difference: -15.2 APS Indicator: 0 Cylinder #: Cylinder Exp. Date:
08/29/13 11:44	2,712.400	2,724.000	-11.600	-0.4	
08/29/13 12:44	2,707.600	2,724.000	-16.400	-0.6	
High-Level					
08/29/13 10:49	4,352.400	4,369.000	-16.600	-0.4	CEMS Mean (Cm): 4350.100 Audit Mean (Ca): 4369.000 Accuracy (A) in %: -0.4 Mean Difference: -18.9 APS Indicator: 0 Cylinder #: Cylinder Exp. Date:
08/29/13 11:49	4,355.000	4,369.000	-14.000	-0.3	
08/29/13 12:49	4,342.900	4,369.000	-26.100	-0.6	

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 07/01/2013 00:00 Through 09/11/2013 08:09

Source: B9
Parameter: B9PNOXLO
System ID: X05
Component ID: P03
Span Value: 200.000
Span Scale Code: L

Test End Date/Time: 07/25/13 09:59
Test Number: XML (P03-Q3-2013-2) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 51.000 Measured Mean: 50.867 Level Error: 0.3 APS Indicator: False
Low-Level					
07/25/13 08:38	51.000	51.100	-0.100	0.2	
07/25/13 09:12	51.000	50.700	0.300	0.6	
07/25/13 09:45	51.000	50.800	0.200	0.4	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 111.500 Measured Mean: 112.100 Level Error: 0.5 APS Indicator: False
Mid-Level					
07/25/13 08:45	111.500	112.200	-0.700	0.6	
07/25/13 09:19	111.500	111.500	0.000	0.0	
07/25/13 09:52	111.500	112.600	-1.100	1.0	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 183.600 Measured Mean: 184.600 Level Error: 0.5 APS Indicator: False
High-Level					
07/25/13 08:52	183.600	185.700	-2.100	1.1	
07/25/13 09:26	183.600	183.600	0.000	0.0	
07/25/13 09:59	183.600	184.500	-0.900	0.5	

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 07/01/2013 00:00 Through 09/11/2013 08:09

Source: B9
Parameter: B9PSO2LO
System ID:
Component ID: P01
Span Value: 400.000
Span Scale Code: L

Test End Date/Time: 07/25/13 09:59
Test Number: XML (P01-Q3-2013-2) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 99.400 Measured Mean: 99.333 Level Error: 0.1 APS Indicator: False
Low-Level					
07/25/13 08:38	99.400	99.000	0.400	0.4	
07/25/13 09:12	99.400	99.600	-0.200	0.2	
07/25/13 09:45	99.400	99.400	0.000	0.0	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 220.500 Measured Mean: 222.300 Level Error: 0.8 APS Indicator: False
Mid-Level					
07/25/13 08:45	220.500	223.800	-3.300	1.5	
07/25/13 09:19	220.500	221.000	-0.500	0.2	
07/25/13 09:52	220.500	222.100	-1.600	0.7	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 365.000 Measured Mean: 364.367 Level Error: 0.2 APS Indicator: False
High-Level					
07/25/13 08:52	365.000	363.700	1.300	0.4	
07/25/13 09:26	365.000	365.400	-0.400	0.1	
07/25/13 09:59	365.000	364.000	1.000	0.3	

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 07/01/2013 00:00 Through 09/11/2013 08:09

Source: B9
Parameter: B9CPCO2
System ID: X09
Component ID: P04
Span Value: 20.000
Span Scale Code: H

Test End Date/Time: 07/25/13 11:35
Test Number: XML (P04-Q3-2013-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 5.600 Measured Mean: 5.600 Level Error: 0.0 APS Indicator: False
Low-Level					
07/25/13 10:23	5.600	5.600	0.000	0.0	
07/25/13 10:52	5.600	5.600	0.000	0.0	
07/25/13 11:23	5.600	5.600	0.000	0.0	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 11.200 Measured Mean: 11.100 Level Error: 0.9 APS Indicator: False
Mid-Level					
07/25/13 10:29	11.200	11.100	0.100	0.9	
07/25/13 10:58	11.200	11.100	0.100	0.9	
07/25/13 11:29	11.200	11.100	0.100	0.9	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 17.900 Measured Mean: 17.733 Level Error: 0.9 APS Indicator: False
High-Level					
07/25/13 10:35	17.900	17.700	0.200	1.1	
07/25/13 11:04	17.900	17.800	0.100	0.6	
07/25/13 11:35	17.900	17.700	0.200	1.1	

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 07/01/2013 00:00 Through 09/11/2013 08:09

Source: B9
Parameter: B9PNOXHI
System ID: X05
Component ID: P03
Span Value: 500.000
Span Scale Code: H

Test End Date/Time: 07/25/13 11:35
Test Number: XML (P03-Q3-2013-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 126.200 Measured Mean: 126.367 Level Error: 0.1 APS Indicator: False
Low-Level					
07/25/13 10:23	126.200	127.100	-0.900	0.7	
07/25/13 10:52	126.200	126.200	0.000	0.0	
07/25/13 11:23	126.200	125.800	0.400	0.3	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 281.600 Measured Mean: 282.633 Level Error: 0.4 APS Indicator: False
Mid-Level					
07/25/13 10:29	281.600	282.600	-1.000	0.4	
07/25/13 10:58	281.600	282.900	-1.300	0.5	
07/25/13 11:29	281.600	282.400	-0.800	0.3	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 461.300 Measured Mean: 458.533 Level Error: 0.6 APS Indicator: False
High-Level					
07/25/13 10:35	461.300	459.000	2.300	0.5	
07/25/13 11:04	461.300	459.200	2.100	0.5	
07/25/13 11:35	461.300	457.400	3.900	0.8	

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 07/01/2013 00:00 Through 09/11/2013 08:09

Source: B9
Parameter: B9PSO2HI
System ID:
Component ID: P01
Span Value: 4,000.000
Span Scale Code: H

Test End Date/Time: 07/25/13 11:35
Test Number: XML (P01-Q3-2013-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 1,006.000 Measured Mean: 1,024.300 Level Error: 1.8 APS Indicator: False
Low-Level					
07/25/13 10:23	1006.000	1015.900	-9.900	1.0	
07/25/13 10:52	1006.000	1029.700	-23.700	2.4	
07/25/13 11:23	1006.000	1027.300	-21.300	2.1	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 2,218.000 Measured Mean: 2,239.333 Level Error: 1.0 APS Indicator: False
Mid-Level					
07/25/13 10:29	2218.000	2207.100	10.900	0.5	
07/25/13 10:58	2218.000	2263.700	-45.700	2.1	
07/25/13 11:29	2218.000	2247.200	-29.200	1.3	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 3,589.800 Measured Mean: 3,560.167 Level Error: 0.8 APS Indicator: False
High-Level					
07/25/13 10:35	3589.800	3554.500	35.300	1.0	
07/25/13 11:04	3589.800	3573.300	16.500	0.5	
07/25/13 11:35	3589.800	3552.700	37.100	1.0	

Cylinder Gas Audit

Plant: Manitowoc Public Utilities

Report Period: 07/01/2013 00:00 Through 09/11/2013 23:59

Source: B9
Parameter: B9PCOLO
Instrument Span: 100.000

Test Date/Time: 07/25/13 09:59
Test Result: Pass
Aborted?: No

Time	CEMS Value	Audit Value	Difference	% of Audit Value	
Low-Level					
07/25/13 08:38	26.400	24.900	1.500	6.0	CEMS Mean (Cm): 23.900
07/25/13 09:12	23.400	24.900	-1.500	-6.0	Audit Mean (Ca): 24.900
07/25/13 09:45	21.900	24.900	-3.000	-12.0	Accuracy (A) in %: -4.0
					Mean Difference: -1.0
					APS Indicator: 0
					Cylinder #: CC232250
					Cylinder Exp. Date: 06/12/2014
Time	CEMS Value	Audit Value	Difference	% of Audit Value	
Mid-Level					
07/25/13 08:45	57.000	55.500	1.500	2.7	CEMS Mean (Cm): 56.200
07/25/13 09:19	54.900	55.500	-0.600	-1.1	Audit Mean (Ca): 55.500
07/25/13 09:52	56.700	55.500	1.200	2.2	Accuracy (A) in %: 1.3
					Mean Difference: 0.7
					APS Indicator: 0
					Cylinder #:
					Cylinder Exp. Date:
Time	CEMS Value	Audit Value	Difference	% of Audit Value	
High-Level					
07/25/13 08:52	86.000	89.400	-3.400	-3.8	CEMS Mean (Cm): 84.333
07/25/13 09:26	89.100	89.400	-0.300	-0.3	Audit Mean (Ca): 89.400
07/25/13 09:59	77.900	89.400	-11.500	-12.9	Accuracy (A) in %: -5.7
					Mean Difference: -5.1
					APS Indicator: 0
					Cylinder #:
					Cylinder Exp. Date:

Cylinder Gas Audit

Plant: Manitowoc Public Utilities

Report Period: 07/01/2013 00:00 Through 09/11/2013 23:59

Source: B9

Test Date/Time: 07/25/13 11:35

Parameter: B9PCOHI

Test Result: Pass

Instrument Span: 5000.000

Aborted?: No

Time	CEMS Value	Audit Value	Difference	% of Audit Value	
Low-Level					
07/25/13 10:23	1,190.700	1,280.000	-89.300	-7.0	CEMS Mean (Cm): 1184.400 Audit Mean (Ca): 1280.000 Accuracy (A) in %: -7.5 Mean Difference: -95.6 APS Indicator: 0 Cylinder #: SX-49709 Cylinder Exp. Date: 07/05/2014
07/25/13 10:52	1,182.500	1,280.000	-97.500	-7.6	
07/25/13 11:23	1,180.000	1,280.000	-100.000	-7.8	
Mid-Level					
07/25/13 10:29	2,690.800	2,722.000	-31.200	-1.1	CEMS Mean (Cm): 2709.933 Audit Mean (Ca): 2722.000 Accuracy (A) in %: -0.4 Mean Difference: -12.1 APS Indicator: 0 Cylinder #: SX-14027 Cylinder Exp. Date: 07/12/2014
07/25/13 10:58	2,719.000	2,722.000	-3.000	-0.1	
07/25/13 11:29	2,720.000	2,722.000	-2.000	-0.1	
High-Level					
07/25/13 10:35	4,510.300	4,513.300	-3.000	-0.1	CEMS Mean (Cm): 4518.833 Audit Mean (Ca): 4513.300 Accuracy (A) in %: 0.1 Mean Difference: 5.5 APS Indicator: 0 Cylinder #: Cylinder Exp. Date:
07/25/13 11:04	4,523.400	4,513.300	10.100	0.2	
07/25/13 11:35	4,522.800	4,513.300	9.500	0.2	